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Product Information

SILu™Prot AKT3, RAC-gamma serine/threonine-protein kinase, human
recombinant, expressed in HEK 293 cells
SIL MS Protein Standard, ^{13}C and ^{15}N-labeled

Catalog Number **MSST0053**
Storage Temperature –20 °C

Synonyms: Protein kinase Akt-3, Protein kinase B gamma (PKB gamma), RAC-PK-gamma, STK-2

Product Description

SILu™Prot AKT3 is a recombinant, stable isotope-labeled human AKT3 which incorporates [$^{13}C_6$, $^{15}N_4$]-Arginine and [$^{13}C_6$, $^{15}N_2$]-Lysine. Expressed in human 293 cells, it is designed to be used as an internal standard for bioanalysis of AKT3 in mass spectrometry. SILu™Prot AKT3 is a protein of 500 amino acids (including N-terminal polyhistidine and FLAG® tags), with a calculated molecular mass of 58.9 kDa.

AKT3 is a serine/threonine kinase that is a member of the AKT family. AKT3, like the other AKT members, is activated in cells in response to diverse stimuli such as hormones, growth factors, and extracellular matrix components.[1] AKT3, once activated by phosphorylation at Ser^{472} and Thr^{305}, promotes proliferation, cell survival, motility, and angiogenesis processes, interfering with the apoptotic functions of the cell.[2] AKT3 plays an important role in brain development and is crucial for the viability of malignant glioma cells.[3] It has been reported that mice lacking Akt3 have small brains.[3] Recent evidence indicates that AKT3 is frequently overexpressed in many types of human cancers including breast and prostate.[4-5] The aggressiveness of several types of solid tumors and hematologic malignancies is linked to the deregulation of AKT and its upstream signaling partners. Members of the AKT pathway are therefore potential targets for novel anti-cancer therapeutics.[6]

Each vial contains 10 µg of SILu™Prot AKT3 standard in a solution of phosphate buffered saline with 1 mM EDTA and 25% glycerol. Vial content was determined by the Bradford method using BSA as a calibrator.

Purity: ≥95% (SDS-PAGE)

Heavy amino acids incorporation efficiency: ≥98% (MS)

UniProt: Q9Y243

Sequence Information:
The N-terminal polyhistidine and FLAG® tags are italicized.

*MDYKDDDDKGHHHHHHHHGGQ*MSDVTIVKEGWVQ
KRGEYIKNWRPRYFLLKTDGSFIGYKEKPQDVDLPYP
LNNFSVAKCQLMKTERPKPNTFIIRCLQWTTVIERTFH
VDTPEEREEWTEAIQAVADRLQRQEEERMNCSPTSQ
IDNIGEEEMDASTTHHKRKTMNDFDYLKLLGKGTFGK
VILVREKASGKYYAMKILKKEVIIAKDEVAHTLTESRVL
KNTRHPFLTSLKYSFQTKDRLCFVMEYVNGGELFFHL
SRERVFSEDRTRFYGAEIVSALDYLHSGKIVYRDLKLE
NLMLDKDGHIKITDFGLCKEGITDAATMKTFCGTPEYL
APEVLEDNDYGRAVDWWGLGVVMYEMMCGRLPFY
NQDHEKLFELILMEDIKFPRTLSSDAKSLLSGLLIKDPN
KRLGGGPDDAKEIMRHSFFSGVNWQDVYDKKLVPPF
KPQVTSETDTRYFDEEFTAQTITITPPEKYDEDGMDC
MDNERRPHFPQFSYSASGRE

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store the product at –20 °C. The product retains its concentration for at least 2 years as supplied. After initial thawing it is recommended to store the protein in working aliquots at –20 °C.

References

1. Alessi, D.R., and Cohen, P., Mechanism of activation and function of protein kinase B. *Curr. Opin. Genet. Dev.,* **8(1)**, 55-62 (1998).
2. Coffer, P.G. et al., Protein kinase B (c-Akt): a multifunctional mediator of phosphatidylinositol 3-kinase activation. *Biochem. J.,* **335(1)**, 1-13 (1998).
3. Easton, R.M. et al., Role for Akt3/protein kinase Bγ in attainment of normal brain size. *Mol. Cell Biol.,* **25(5)**, 1869-1878 (2005).
4. Nakatani, K. et al., Up-regulation of Akt3 in estrogen receptor-deficient breast cancers and androgen-independent prostate cancer lines. *J. Biol. Chem.,* **274**, 21528-21532 (1999).
5. Cicenas, J., The potential role of Akt phosphorylation in human cancers. *Int. J. Biol. Markers,* **23(1)**, 1-9 (2008).
6. Garcia-Echeverria, C., and Sellers, W.R., Drug discovery approaches targeting the PI3K/Akt pathway in cancer. *Oncogene,* **27(41)**, 5511-5526 (2008).

Legal Information

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